



PATENT  
Customer No. 22,852  
Attorney Docket No.: 6890-11-1

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicants : Kang Tae Lee et al.  
Serial No. : 09/927,338  
Filed : August 13, 2001  
For : Skin Cosmetic Composition Containing Kidney Bean Extracts  
Group Art Unit : 1616  
Examiner : K. George

**DECLARATION UNDER 37 C.F.R SECTION 1.132**

Honorable Commissioner of  
Patent and Trademarks  
Washington, D.C. 20231

I, Kang Tae LEE, citizen of Republic of Korea and residing at 102-704, Hando APT. SameunRi, JiksanKun, CheonanSi, ChungCheongNamDo, Korea, hereby declare as follows:

I am one of the co-inventors of the subject matter of the above-identified application.

2. My personal particulars are summarized as follows:

**[Work Experience]**

1987-1994 : Major in Microbiology at Chungnam National University  
Degree : Bachelor of Science  
1994-1996 : Major in Microbiology at Chungnam National University  
Degree : Master of Science  
M. S. thesis : Biosynthesis and characterization of poly- $\beta$ -hydroxyalkanoates synthesized by *Bacillus thuringiensis* R-510

**[Employment]**

(1996 ~ Present) : Researcher at Skin Biology Team, R&D Center, Coreana Cosmetics.

**[Journal Publication]**

**Brazilin as a new sunless tanning agent.** K.T. Lee and J.H. Kim

*Proceeding of ASCS(Asian Societies of Cosmetics Scientists)*, May, 24, 1997.

**Biological screening of 100 plant extracts for cosmetic use(I) : Inhibitory activities of tyrosinase and DOPA auto-oxidation.** K.T. Lee, B.J. Kim and J.H. Kim, *International Journal of Cosmetic Science* 19, 291-298(1997).

**Brazilin as a new sunless tanning agent.** K.T. Lee and J.H. Kim, *International Journal of Cosmetic Science* Accepted at 1998.

**Inhibitory effects of ramulus mori extracts on melanogenesis.** J. H. Kim and K.T. Lee, *Cosmetics and Toiletries*, in press, October. 1998.

**Biological screening of 150 plant extracts for cosmetic use(III) : Development of sun-screen agent from natural plants.** K.T. Lee and J.H. Kim, Submission at *International Journal of Cosmetic Science* 1998.

**[Presentation]**

ASCS(May 24, 1997, Taiwan)

-Brazilin as a new sunless tanning agents.

IFSCC(September 16, 1998, France)

-Preliminary studies on natural plant extracts as sunscreen agent.

-Inhibitory effects of ramulus mori extracts on melanogenesis.

**[Patent Application]**

**9 cases (KP: 5, USP: 3, JP: 2 and EP:1)**

Nation	Title	Application No.
KP (Korean patent)	Whitening cosmetics containing ramulus mori extracts	97-47261
	Whitening cosmetics containing solvent-fractionated extracts of ramulus mori extracts	97-47259
	Whitening cosmetics containing mulberrin	97-47260
	Tanning cosmetics containing <i>Caesalpinia sappan</i> L. extracts	97-30755
	Tanning cosmetics containing brazilin	97-4914

JP (Japan Patent)	Whitening cosmetics containing ramulus mori extracts	97-354507
	Whitening cosmetics containing mulberrin	97-354508
USP (United States Patent)	Whitening cosmetics containing solvent-fractionated extracts of ramulus mori extracts	08/988840
	Whitening cosmetics containing mulberrin	08/987149
	Tanning cosmetics containing <i>Caesalpinia sappan</i> L. extracts	08/900883
EP (Europe Patent)	Tanning cosmetics containing <i>Caesalpinia sappan</i> L. extracts	97305561.9

3. I am thoroughly familiar with the Office Action dated February 4, 2004, wherein the Examiner has rejected claims 5-10 of the present application under 35 U. S. C. 102(b) as being anticipated by Miyamoto et al. (JP Pat. Application No. 63-66109).

#### **A. Identification of components contained in kidney bean extracts of the present invention**

Applicants have shown by TLC analysis in a 132 Declaration that kidney bean extracts contain four components, while kidney bean pod extracts contain only tramatic acid. The result of the TLC analysis was as follows:

Table 1 (described in a 132 Declaration)

R <sub>f</sub> value		
Kidney bean extrcets	Kidney bean pod extrcets	Traumatic acid
0.73	0.73	0.73
0.64		
0.58		
0.55		

To identify names of the other ingredients beside traumatic acid ( $R_f$  value: 0.73) in kidney bean extracts of the present invention, TLC analysis was conducted again as follows:

#### A-1. TLC analysis

The method for obtaining kidney bean extract was identical with that in Example 8 of the present invention. Dry weight of kidney bean extract was 127.4g.

The extract was dissolved in purified water. NaCl and then ethyl acetate were added thereto, subjected to sufficient stirring and the ethyl acetate layer was taken. This was subjected to TLC on mobile phase of  $\text{CH}_2\text{Cl}_2$ : MeOH= 10:1, and spots were identified with 5% sulfuric acid solution.

For each phytic acid ( $\text{C}_6\text{H}_{18}\text{O}_{24}\text{P}_6$ , Sigma-Aldrich Corporate) and aspartic acid (Sigma-Aldrich Corporate), TLC analysis was conducted on identical mobile phase by dissolving in ethyl acetate, and spots were located.

The result of the TLC analysis is given in the following Table 2.

Table 2

$R_f$ value		
Kidney bean extracts	Phytic acid ( $\text{C}_6\text{H}_{18}\text{O}_{24}\text{P}_6$ )	Aspartic acid
0.73		
0.64	0.64	
0.58		0.58
0.55		

On this basis, it could be confirmed that Kidney bean extracts of the present invention contain traumatic acid ( $R_f$  value: 0.73), phytic acid ( $R_f$  value: 0.64) and aspartic acid ( $R_f$  value: 0.58).

## **B. Experiment for collagen synthesis (type I collagen biosynthesis) effect**

Phytic acid (Sigma-Aldrich Corporate) and tramatic acid (Sigma-Aldrich Corporate) were used separately by dissolving in 1,3-butylene glycol to 1% concentration and the testing method was identical with Experimental Example 2 of the present invention.

The result is given in the following Table 3.

Table 3

Sample Conc. ( $\mu\text{g/ml}$ )	Collagen Synthesis ( $\text{ng}/2 \times 10^4$ cells)	
	Phytic acid	Tramatic acid
Control	145	145
100	185	155

On this basis, it could be confirmed that collagen synthesis effect of phytic acid is far more excellent than tramatic acid.

Applicants have also shown by Experiment for collagen synthesis (type I collagen biosynthesis) effect in a 132 Declaration that collagen synthesis effect of Kidney bean extract of the present invention is far more excellent than that of Kidney bean pod extract or tramatic acid. The result of the Experiment was as follows:

Table 4 (described in a 132 Declaration)

Sample Conc. ( $\mu\text{g/ml}$ )	Collagen Synthesis ( $\text{ng}/2 \times 10^4$ cells)		
	Kidney bean extract	Kidney bean pod extract	Tramatic acid
Control	151	150	150
100	204	152	165
250	251	155	175

In the view of the above Table 3 and Table 4, it could be confirmed that the excellent collagen synthesis effect of Kidney bean extract of the present invention is derived from phytic acid and tramatic acid and, particularly, is deeply connected with phytic acid.

In conclusion the kidney bean extract of the present invention clearly differs from kidney bean pod extract or Tramatic acid of Miyamoto et al. (JP Pat. Application No. 63-66109), in the view of its effect as well as the components.

Dated: July 1, 2004



Kang Tae LEE